Neurological Correspondence.

NEUROLOGICAL MATTERS IN NEW YORK.

MESSRS. EDITORS:—I have to report that during the three months just passed, matters pertaining to Neurology have been exceedingly active. Societies, other than those dedicated especially to the consideration of this specialty, have devoted a considerable time to its study. It is a good sign, for there is no question but that the nervous system should be studied very much more than it is by the general practitioner.

I will endeavor to give you the cream of the discussions which have taken place. I also forward you a number of papers entire, which have been kindly furnished by their several authors for the JOURNAL:

THE NEUROLOGICAL SOCIETY.

Dr. Thomas R. Pooley read a paper, entitled "Hemiopia," in which he considered the arguments *pro* and *con*, as to the total or semi-decussation of the nerve fibres in the optic chiasm.

He reported a case of hemiopia in his own practice, together with post-mortem, and gave a review of cases in literature, so far as accessible, in order to ascertain which of the views relating to the course of the nerve fibres is supported by clinical observations. His own case was one of right-sided binocular hemiopia, dependent on a gummy tumor in the left posterior lobe of the brain; the following is a summary:

Dr. Pooley said: "On September 14, 1875, a gentleman, 55 years of age, consulted me. Thirty years ago he contracted a chancre, which was followed by only a slight pharyngitis. He took mercury and iodide of potassium, for a time, and has had no manifestations of the disease since. He was married, and had two healthy children, one of whom is married. Until the

attack about to be described, he had always been healthy. Six weeks before his first visit to me, he complained of mental illusions, and epileptiform convulsions, severe and prolonged, followed by maniacal excitement, lasting for several hours; soon after he had another similar attack, followed by slight frontal headache. After the last attack there was a disturbance of vision, which he described as a fluttering before the eyes, but no diplopia. When I saw him the annoyance of vision had passed away; and he was referred to me for an ophthalmoscopic examination. He felt dizzy, talked confusedly; memory bad, omitted words, and was exceedingly emotional. He had slight periodical headaches, with nightly exacerbations, and inordinate desire for sexual intercourse. There were no external manifestations of syphilis; no paresis of the ocular muscles, nor mydriasis. Examination of the eyes showed M $\frac{1}{16}$ S $\frac{20}{20}$, slight insufficiency of the interni, and a small posterior staphyloma in each eye. The field of vision was unimpaired. Dr. Keyes and I made the diagnosis of cerebral syphilis, and ordered iodide of potassium, bromide of potassium, and bromide of ammonium. Two days later he returned, saying that he could not see objects in the right part of the field of vision. On examination, we detected *right-sided hemiopia of both eyes, which was sharply defined by a line drawn vertically through the points of fixation.* He took the prescribed remedies for about a month, during which time he improved in all particulars, and even lost his hemiopia for a time; it soon returned, however, and continued thereafter until his death. About the beginning of November, I first noticed that he had partial hemiplegia of the right side, and some paralysis of sensation in the right arm. His memory was more impaired, and, in conversation, he was often at a loss for the appropriate words. He continued much in the same condition until about Christmas, when he became very feeble and considerably emaciated. There was, however, no accession of his cerebral symptoms, and his attending physician was inclined to attribute much of his trouble to an affection of the liver. He recovered again from this attack, and, to some extent, resumed his duties. The hemiplegia and aphasia were more pronounced. Early in

March he became much worse, attacks of vertigo almost amounting to loss of consciousness, became more frequent.

"On the 30th of March, he complained of diminution of vision of the left eye. I found S-$\frac{20}{50}$ and choked disc in the left eye, whereas there was no change in the right. I now positively insisted on my previously expressed diagnosis of intracranial tumor, and gave a hopeless prognosis, thereby preventing a journey to the Hot Springs of Arkansas.

"In the night of April 7th, he had very intense pain in the head, followed by tonic convulsions and coma, in which condition he died early in the morning of the 8th of April.

"The post-mortem was made on the 9th, thirty hours after death, with the assistance of Dr. Knapp, and in the presence of Drs. Bowden, Lynch and Jourdan.

"On the inner surface of the calvarium were two small defects of substance, apparently caused by an absorption of the inner table. Meninges normal. The dura, however, in the posterior portion of the posterior lobe was adherent to the bone, and thickened, the surface of adhesion being about the size of a cent. Right hemisphere normal.

"The left posterior lobe was somewhat enlarged, and had a depression in its posterior portion, in which, imbedded in the substance of the brain, lay a yellowish-white, rather hard, and somewhat roundish tumor, about $1\frac{1}{4}''$ in diameter and $\frac{1}{2}'$ thick. It was so closely adherent to the dura and pia that it had to be detached with the knife in removing the brain.

"There was a considerable area of softening of the brain substance, which, in the immediate vicinity of the tumor, was almost liquid, and quite gradually increased in consistency as it passed over into the normal brain substance. The softening extended from the posterior through the entire middle lobes, and ceased at the anterior portion of the anterior lobe and at the posterior portion of the posterior lobe. The left thalamus opticus and the neighboring brain substance were completely softened. The cerebellum was normal. The chiasm and optic nerve trunks showed no abnormality throughout their entire course. Nor was there any appreciable change in the vessels at the base of the brain. The right lateral ventricle was dilated and filled with serum. *Thorax*, apex of right lung ad-

herent to pleura throughout to small extent, and when separated showed numerous small punctate, whitish granulations. Left lung also adherent, but to less extent. The apices of both lungs showed the usual changes of chronic pneumonia. Heart normal. *Abdomen*, liver irregularly lobulated, fatty, and has three stellate scars upon its anterior border. Spleen normal. Kidneys, with the exception of some hyperæmia of the cortex, normal. Nothing unusual was found in the other parts of the body. The tumor had a solid, rather whitish centre, with a less consistent hyaline periphery.

"For the following report of the microscopical examination of the specimens, I am indebted to Dr. Alt, resident surgeon of the New York Ophthalmic and Aural Institute. Over the tumor of the brain, the meninges were very much thickened, by the new formation of fibrous tissue. The tumor itself was formed of round cells of various sizes, between which there was a small amount of hyaline matrix, not very different from myxomatous tissue, in which some long, striated elements of connective tissue could be found. Whilst in the tumor itself no vessels were to be found, its surroundings were very vascular. These vessels showed the following very remarkable changes. Their walls, especially those of the capillary vessels, were very much thickened, and transformed into a hyaline mass. This thickening was frequently so far developed to entirely close up the lumen of the vessel. In this hyaline mass some small, fatty globules were scattered around.

"There was also one larger vessel which showed the atheromatous changes to a very marked extent. It was surrounded by the remnants of an old considerable hemorrhage, which was situated posterior to the tumor. No more nerve elements any longer existed in the tumor. The mass of the brain which surrounded the growth, exhibited in a well marked manner, what is called yellow softening. Not only was the marrow of the nerve fibres in a state of fatty degeneration, but there was also a great amount of fatty detritus. The indurated parts of the apices of the lungs showed the changes produced by chronic parenchymatous and interstitial pneumonia. The induration was caused by the new formation of connective tissue, which was pigmented in the ordinary way, and enclosed some small heaps of round cells,

and fatty detritus. The stellate scars of the liver were formed in the same manner of dense connective tissue, which was in connection with the thickened capsule of Glisson. Between the fibres of connective tissue were found remnants of liver cells, in fatty metamorphosis detritus. The scars were very vascular. The parenchyma of the liver, as a whole, was in the beginning stage of fatty degeneration, and, as is always the case, the periphery of the lobuli exhibited this process of metamorphosis to the most marked extent. There was no amyloid reaction."

The conclusions at which Dr. Pooley arrived are embraced in the following propositions:

1. "That in right and left-sided hemiopia the impairments of vision, as well as the accompanying symptoms of paralysis, can only be explained by the theory of semi-decussation. Symptoms of paralysis are especially in favor of this view. The existing morbid process may be located in the optic tract, corpora quadrigemina, or optic thalami.

2. "Temporal hemiopia is most easily explained by assuming that in such cases we have a lesion which presses upon both inner sides of the optic nerve fibres (fasciculæ cruciati); and this destroys the inner half of both retinæ. And such have been the lesions actually found. This explanation is quite compatible with the theory of semi-decussation.

3. "Nasal hemiopia is produced by pressure upon the posterior angle of the chiasm, or by pressure of pathologically changed arteries upon the outer border of the optic chiasm—that is to say, the inner crossed fibres. But, strictly speaking, the crossing of the fibres in the chiasm is not brought into the question, as only the inner fasciculi are crossed. It must also be admitted that in this form of hemiopia changes so commonly seen in the optic nerve and retina are, to some extent, responsible for the defect of vision in the visual field.

4. "The observations of superior and inferior hemiopia are too few to warrant us in coming to any positive conclusion as to their signification in deciding this question."

Dr. Edward C. Spitzka said: "I dare venture an opinion on this question only in so far as it touches on the confines of neuro-physiology and comparative anatomy, and from these

points of view I can affirm the conclusion at which Dr. Pooley had arrived, to its fullest extent. The case observed by the Dr. himself, and in which a very careful post-mortem analysis seems to have been made, certainly cannot be explained on any other ground than that of a partial decussation. The principal lesion noticed was a large gummatous tumor, compressing and destroying a great part of the occipital lobe of one hemisphere, the opposite hemisphere being found intact in the corresponding region. Now, the gentleman who has last spoken referred to a connection between the retina and the occipital lobes, as discovered by Dr. Ferrier, a connection which, I may add, was, long before Ferrier performed his experiments, discovered by Gratiolet and confirmed by the physiological researches of Meynert: witness the former's "radiations optiques.

"Therefore a single well-authenticated case, in which other lesions can be excluded, and in which bilateral hemiopia exists in connection with a localized destruction of certain convolutions in one occipital lobe, would appear to be conclusive evidence as to the existence of a partial decussation. That our visual impressions are registered in the cortical centres of the hemispheres, admits of no doubt at the present day. Let us, then, consider the probable manner of such registration, and we shall see why no other conclusion is admissible: Our registered visual impressions are stereoscopic in character, and normal stereoscopic vision implies the functional participation of both eyes in the visual act—an isolated compound conception, be it abstract or sensorial, of which latter a stereoscopic registration is an example, will have for its presumptive seat, such groups of ganglionic cells as are situated topographically near each other, and consequently at least in the same hemisphere. It follows that the corresponding centre and seat of a stereoscopic recollected image must be connected on the one hand with the eye of the same side, on the other with the opposite eye. It is true that we might suppose a stereoscopic blending to result from the union existing between symmetrical centres on opposite hemispheres, through the corpus callosum, but a connection of this kind, although it may exist in relation to the double projection of identical fields of vision,

must be of secondary importance to such a contrivance as a partial decussation, on account of the interposition of a second tract, delaying the transmission of impressions from hemisphere to hemisphere, and seriously interfering with the necessary synchronous character of the double impressions composing a stereoscopic picture.

"Direct anatomical examination has led me to the result that in the human chiasm, as in the chiasm of certain of the higher mammalia, the outermost fibers on each tract go to the optic nerve of the same side. That as regards the lower animals, Biesiadecki and others are correct in claiming a total decussation, does not militate against the previous observation which applies to genera whose eyes are directed forwards, not laterally as is the case of the species first examined by the authors who believe in a total decussation in every vertebrate! That such a total crossing does exist, for instance with the teliost fishes, any one can satisfy himself by examining the encephalon of the common haddock, where the right optic nerve, coming from the left optic tubercle, passes *under* the left optic nerve coming from the right optic tubercle without entering into *any* connection with it at all; or the herring tribe (Clupea), in whose case the one nerve passes through a slit in the opposite nerve.

"As to the total atrophy of one optic tract ever resulting from artificial or pathological destruction of the opposite optic nerve, I have every reason to suppose that a naked eye examination is calculated to mislead. I am under the impression that most pathological records will show that destruction of the one optic nerve in its whole diameter results in degeneration of both optic tracts. The opposite tract is, in such cases, more decidedly atrophied than the tract on the same side, for the simple reason that the fibres which do decussate preponderate over those which remain on the same side, and frequently the more marked atrophy has been alone noticed. In these cases the microscope affords the safest test and criterion.

"Certain apparently anomalous aberrations from the normal standard, have been accumulated in our literature, whose existence it is more difficult (if not impossible) for those to explain, who believe in a total decussation, than for their op-

ponents. Among others, Caldane,* and Vesalius, the great anatomical master, noticed an absence of the optic chiasm in human subjects, the nerve for the right eye coming from the right hemisphere, that of the left, from the left hemisphere. Vesalius had the good fortune to have been acquainted with the subject he dissected, during lifetime, and was thus enabled to give us the assurance, that neither diplopia nor hemiopia existed in the man. It is a law, derived from accumulated experience and observation, by morphologists and teratologists, that the more frequent aberrations from any standard, which is called typical, are foreshadowed by an embryonic stage, or by some similar condition of lesser degree, existing in the adult, and whose excessive and even exclusive development in one individual constitutes the variation in question; if, then, we suppose the uncrossed fibres to preponderate in growth and development, over the crossed fibres, we shall have at least offered a better theory, in explanation of such exceptional cases, than can be advanced by those, who claim a total decussation.

"Advocates of the opposite side of the question might assert, as I believe has been asserted, by one of the authors quoted by Dr. Pooley, that cerebral changes being so frequently symmetrical, corresponding areas on opposite hemispheres, were coincidently affected, and applying it to the case in question, suggest that some unobserved lesion had existed on the opposite side from where the gumma was found. But against this I have to say, that while meningeal exudations, calcareous plates of the pia mater, and the foci of encephalitic processes generally are often strikingly† symmetrical, adventitious growths, such as existed in Dr. Pooley's case,

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* 'De anno 1520 Paduae fecimus anatomiam, quam legit D. Nicolaus de Janua, ubi vidimus omnes, qui ibi aderant, et praecipue doctores sacratissimi Collegii Patavini, inter quos ego Ludovicus Pasinus, vidimus, inquam, nervos optieos, notabiliter separatos, ut dexter tendebat ad oculm dextrum, sinister vero ad sinistrum, unde quod vidimus testamur, nec veritas habet angulos.'

† 'Numerous other cases are noticed by mediæval anatomists—the only instance noticed within recent years, with which I am acquainted, is a specimen without a history, in the museum of the Westminster Hospital, London."

follow no rule whatsoever in this respect. I would have been much interested to know whether the same hemisphere or the ambitus cerebelli, exhibited other gummata, as explaining other sharply defined symptoms of cerebral disturbance in this case, and do not know whether it was examined in this direction or not. With the increasing perfection of cerebral autopsies, cases of single gummata are becoming more and more rare, although the possibility of their solitary existence is not yet to be denied. It is unfortunate that the thalamus was disorganized on that side, where the cortical centre was destroyed, it renders the anatomical diagnosis more complicated; however, the changes of this ganglion were evidently secondary, to the invasion of the cortex by the progressing tumor, and as the hemiopia was of long standing, I think that we may safely say that it was produced by the annihilation of the perceptive centres on one side of the brain, and that Dr. Pooley's case forms a valuable addition to the pathological evidences, which are accumulating in favor of a partial decussation of the optic nerves."

Prof. Hammond mentioned a case under his care probably having some bearing on several points in the paper of Dr. Pooley:

A married man subject to syphilis, was seized one night with hemiplegia, involving the left side, aphasia, and nasal hemiopia of left eye only. He was treated with iodide of potassium, which produced an apparent recovery. A short time after, probably a month, he was attacked again with hemiplegia, this time upon the right side, with right hemiopia, but no aphasia. He recovered from that, and was attacked a third time with hemiopia of left eye, right hemiplegia and aphasia.

Dr. Eugene Dupuy believed in entire decussation of the fibres. Experiments were performed more than fifty years ago, and so far as they went, they showed complete decussation. He himself has been performing a series of experiments, confirming those referred to above, and has found that decussation is especially marked in some fishes, and lower animals. He also referred at length to the experiments of Dr. Ferrier, of London, regarding the connection of the retina and occipital lobes.

At a meeting of the Neurological Society, held Nov. 6th, 1876, Prof. Hammond read a paper on "Hysterical Contractions." The paper will be found in another portion of this JOURNAL.

After the reading of the paper, the following remarks were made:

Prof. M. A. Pallen said:

There were some points in the paper of Dr. Hammond on which he (Prof. Pallen) would desire a more definite history, particularly with regard to some of those cases of young girls (cases 11 and 12) who suffer from contracted knee joints. The largest number of these cases he believed occurred in females, and the majority of these in young girls, in whom the generative principle is most active. With many of these cases the history is so meagre that we are unable to make out a positive diagnosis of hysteria. The majority of these cases, he thought, depended upon disease of the cord, but at the same time there may be neuralgia. He was one of those few persons who believe that hysteria always originates in the ovario-uterine region, and that secondary changes take place in the cord, as a result of that condition. He does not think that they are primarily produced in the cord. He had seen several cases of hysterical contractions of the joints. One was a young woman, 27 years of age, of excessively nervous organization, whose emotional power was intense. The flexor muscles were contracted to such an extent that the heel rested upon the buttocks. She had been put under the influence of morphia, and her limb was immovable for three weeks; this treatment was abandoned as of no avail. Her menses were regular (every 28 days), but there was at this time a great deal of irritability of the spine. In consultation with the physician in charge, he suggested the propriety of removing the ovary, which was not agreed to, and the patient was lost sight of, until a year after, when she died of general marasmus and with various hysterical manifestations. He would like to ask Prof. Hammond why he uses ergot in these cases, unless there is some hyperæmia of the cord?

Prof. Hammond said he only used it in one case, and then he gave the reason for it.

Prof. Pallen had seen many cases of hysterical contraction. He had seen spasms resulting from the irritation of the clitoris by ascarides.

Prof. Hammond desired to know if Dr. P. called such cases hysterical?

Prof. Pallen thought they were more properly involuntary contractions from a special cause. He thought there was no doubt but that many of these cases of hysteria depended upon uterine or ovarian causes. He had, however, seen more cases of hysteria which did not depend upon such cause.

Prof. L. A. Sayre referred at some length to the subject of reflex irritability from an abnormal condition of the genital organs, and mentioned several cases where the patients were cured by the simple removal of the source of irritation, and in such cases the cure is almost immediate.

Prof. Pallen still thought that over 90 per cent. of the cases of hysteria resulted from uterine or ovarian irritation. He further remarked that he had seen cases of hysteria in boys; whereupon Prof. Hammond remarked that he thought his friend Pallen a little inconsistent. He says hysteria is due to irritation of the ovaries, and then says hysteria occurs in boys! He had seen several cases where there was no material irritation whatever. Many suffer from an excess of imagination, and much of the trouble is brought on voluntarily. He had had a patient under his care having hysteria, to whom he administered 12 oz. of chloroform in the course of twenty-four hours. She was again attacked, and when she heard the name "chloroform" she got well! He had seen other cases where cold water was thrown on the patient, and they were cured instantly!

Dr. Dougherty, of New Jersey, mentioned a case of a lady, aged 48, who had been abroad, and who, on her return from Europe, found that her husband had not remained at home as steadily as he ought to have done. She, therefore, accused him of infidelity, while she consoled herself by going into a hysterical state, which terminated in melancholia. She would sometimes brighten up, but would relapse into this peculiar condition. She could procure sleep only by the aid of anodynes. Her case presented such phenomena as to cause her friends to desire to have her transferred to a quiet place. Now, said Dr.

D., was this hysteria, or was it insanity? What is the limit between insanity and hysteria?

Prof. Hammond thought that, according to Prof. Pallen, if the lady had passed her climacteric period she could not have hysteria.

Prof. Pallen said he did not state that if a woman had passed her menstrual period she would no longer be subject to hysteria.

In connection with the subject of hysteria we will quote Prof. Pallen's views as enunciated in a debate at a meeting of this society in February, 1875.

Clinically speaking, he remarked, we can get some insight into the trouble by studying its phenomena synthetically rather than analytically, for its effects point very decidedly to its cause.

He has been in the habit of dividing hysteria into centric, when there is a want of co-ordinative action between the cerebro-spinal and sympathetic systems of nerves, and eccentric, or peripheral, the result of reflex irritability—the totality of manifestations being a disturbance of motility and sensibility.

What is very strange in the manifestation of hysteria is a very apparent paradox, a complete reversion of the law of intellectual development which recognizes sensuality to be in the inverse ratio of mental culture—that the greater the capacity for sexuality the less the development of mind, marked examples of which are seen in the donkey and the hog! Yet by far the greater number of hysterical patients are women of refinement, culture and purity; women who are æsthetical and sensitive—painters, musicians, poetesses and the like, and who are libidinous, erotic and sensual in the highest degree when laboring under the hysterical attack.

We are often shocked to find young and innocent women, virgins even, exhibiting glaring and marked indications of erotic excitement found only in the voluptuary and the nymphomaniac.

Here is an effect of genital irritation somewhat explaining the pathological status of the individual.

As an analogue, another curious fact is that women very frequently develop in puerperal mania the very opposite quali-

ties of heart and mind which are peculiar to them in health. Thus a pure and religious woman may become obscene and profane. From these facts we observe that, unless we reason synthetically, we cannot obtain any knowledge of the pathology of the trouble, because morbid anatomy has not yet yielded indications of its causation in the nervous system.

There are certain facts, however, which we do know, and which bear very strongly upon the pathology of hysteria, the principal of which is that *pathological changes alone, in the uterus, the ovaries, or both, are rarely productive of the phenomena of hysteria*, but that in a vast number of cases the causes may be traced to disordered functions of the ovaries, either from hypertrophy, early and frequent ovulation, or from coincident uterine and ovarian congestion. Of course he referred only to eccentric or peripheral hysteria, and from data on the subject it is not at all improbable that centric hysteria is but the sequence of the other form; and it, too, might likewise be thus classified as the generative circle, either partially or totally, in most women, is in excess of development.

We often find in frail, delicate women, whose adipose tissue is but very slightly deposited, disproportioned mammæ, an enlarged clitoris, elongated nymphæ, vulvar and vaginal hyperæsthesia, and when we examine the ovaries we discover one or perhaps both sensitive, enlarged, and when rolled between the finger of our hand in the vagina or rectum, and the other hand on the supra pubic region, the hysterical manifestations are induced in an intense and marked degree, and then the reflex irritability which is manifested by and through hysteria finds its causation in the plexuses of nerves distributed in and around the ovario-genital regions. For these reasons only can we account for the libidinous and erotic manifestations of young virgins when laboring under hysteria. Therefore it may be stated that the pathology of hysteria is to be found in causes arising in the pelvis, which are reflected to the cerebro-spinal centres, and manifested by the phenomena of disordered motility and sensibility.

The name "hysteria" is an unfortunate one, as it leads us to locate the trouble in the uterus. The term *ovaria* will not do, as it is the plural of *ovarium*. Ovaritis likewise is objection-

able, because it implies inflammation of the ovaries. Nor will "oopharia" answer, as Barnes calls it, as that locates the trouble in the ovaries alone. Metroopharia would in all probability cover the entire ground as indicative of derangement of the utero-ovarian regions.

The treatment of the hysterical phenomena, although purely empirical, points to its causation. The so-called anti-spasmodics and nervines rarely accomplish any decided results in the more decided forms of the trouble, but if we can succeed in relaxing our patients by emetics, we very often cut short the attack, and frequently prevent its recurrence, until the same pelvic cause again arises. This form of treatment indicates that there is an irritable condition, a tension of certain sets of nerves, which determines the phenomena in question, and these sets of nerves are located in and around the genital circle. The bromides, and the preparations of valerian, musk, asafœdita, camphor, etc., have not been very successful in his hands, and save in the most severe forms of cataleptiform manifestations, chloroform has likewise been inefficient. But if we direct our attention toward the pelvis; if we succeed in allaying ovarian congestion; in modifying ovulation; in relaxing genital nerve-tension and hyperæsthesia, in cases where no surgical interference is demanded, then we can cure our patients of the trouble, instead of alleviating symptoms. In patients who are nymphomaniac, who have enlarged clitoris or hypertrophied nymphæ, nothing short of surgical procedure will accomplish any permanent beneficial result.

Hysteria rarely, if ever, is developed in women with uterine disease simply, but when it does take place, it is coincident with ovulation, except in cases of confirmed hysterical habit when any exciting or emotional cause will develop it, and even in these cases, the conjunction of causes is very apparent. In those cases of hystero-epilepsy and dysmenorrhœic hysteria, we invariably find that the uterus is not the only diseased organ, but that the ovary likewise partakes of the disorder, and the hysterical as well as the epileptiform phenomena are aroused by and are coincident with ovulation. Dysmenorrhœa without hysteria, is a most frequent occurrence, even when the patient labors under that form of so-called "ovarian dysmenor-

rhœa"; yet hysteria never takes place unless there is excess of genesic power as manifested by a marked erotic nature, which may be unrecognized by the woman, and whose life is pure in thought as well as deed, but which develops itself in a more or less intense degree as soon as the hysterical train of deranged motility and sensibility is aroused.

In order to illustrate these points, he would relate a case wherein they were most marked in every particular.

A very well developed, muscular woman, who had menstruated at the age of 12, became impregnated at the age of 16. Up to that time she had been perfect as to menstruation and general health. After impregnation she resorted to abortion, which resulted in chronic endometritis. Each menstrual period thereafter increased the uterine hyperæmia, the hysteralgia becoming greater, until finally the endometrium became so much enlarged and turgid that it prevented a free exit of blood, and there was obstructive dysmenorrhœa co-added to hysteralgia. Hysteria had been a prominent feature of menstruation, and this ultimately became hystero-epilepsy. These symptoms occurred at no other period than at menstruation. She was treated surgically by a division of cervix uteri and the internal os, which did away with the obstruction, and the endocarditis was cured by local applications. Yet she had hysteria, and occasionally hystero-epilepsy, although the hystero-epilepsy was cured. Ovulation still went on. Fortunately, she became impregnated after a few months; ovulation, of course, was suspended, and the hysteria and hystero-epilepsy likewise were suspended. She went to full term, and was delivered of a living child. She never had any more hysteria or hystero-epilepsy, but bore two more children, after which she passed from his observation. This case was one of marked peripheral or eccentric hysteria, dependent upon reflex irritability of the utero-ovarian system of nerves, and is a typical example of the pelvic causation of hysteria.

THE MEDICAL JOURNAL ASSOCIATION.

Oct. 20th, 1876. Geo. M. Schweig, M.D., read a paper on cerebral exhaustion, with special reference to its galvano-balneological treatment.

After a few general remarks, he considered briefly its etiology, pathology, and symptomatology, and then considered its treatment.

The one great object of a therapeutic course is to seek, by appropriate nutrition and physiological stimulation, in conjunction with the much needed rest, to restore to the brain its lost vigor, to correct its impaired nutrition; in short, to bring it back to a normal state. To effect this, it is of the utmost importance that no time should be wasted with tonic measures, that exercise but little, if any, immediate influence on the brain.

The very first condition for treatment, the *sine qua non*, is "rest for the exhausted brain," not a brief rest of days, nor even weeks, but absolute abstinence from all mental tasks throughout the entire treatment, and until health is perfectly restored. * * * Of remedial agents, he has found galvanism to surpass in efficiency all others. At first glance, it would seem that the objects to be attained by this agent could be best effected through *direct* galvanization of the brain. This, however, is impracticable. A direct current, of sufficient intensity to influence the brain, would prove injurious, on the principle that enfeebled organs will not bear strong stimulation. Moreover, we cannot, with the utmost care, prevent the occurrence, at times, during galvanization of the brain, of giddiness, ocular flashes, faintness, etc., all undesirable phenomena, to be avoided in the electrical treatment of functional enfeeblement of the brain. If, on the other hand, we employ a current so feeble, that occurrences such as those enumerated become impossible, or, at least, very remote, and that strong stimulation is out of the question, it becomes very questionable, to say the least, whether a current reaches the brain at all, and if so, it will be too insignificant to accomplish any therapeutic results. His own experience with galvanization of the brain, has long since led him to abandon it in the initial treatment of cases of enfeeblement of that organ.

The manner in which he seeks to effect the *brain* is by *general* galvanization, administered in its only perfect form—the galvanic bath. By its means, the brain is made to sustain a reflex, or indirect influence, from all points of the periphery,

and, at the same time, through derived currents, a mild direct impression, which can be regulated at will; not only by modifying the intensity of the current, but also by establishing more or less perfect communication between the occiput and the water of the bath. This direct influence differs from ordinary cerebral galvanization, whether bi-polar or uni-polar, in that here no electrode is applied directly to the cranium, which, during the entire process, is never, for a moment, in a direct line between the two poles of the battery. It is never attended with any of the undesirable phenomena enumerated above as not always unavoidable in local galvanization. There are, indeed, no subjective sensations during the bath, to indicate that the brain is being acted on at all. Nevertheless, an interruption, or reversal of the current, will promptly produce the galvanic taste, and, if the current has sufficient tension, ocular flashes, etc.; thus establishing, beyond doubt, the fact that the cranial nerves participate fully in the galvanic influence. The galvanic bath, then, of appropriate intensity for each individual case and stage, he looks upon as one of the most valuable remedies for the treatment of cerebral exhaustion. Being at one and the same time, a suitably modified unipolar direct current and a reflex stimulus from every point of the periphery, to bear on the brain, it stands unique among electro-therapeutic proceedures. The electric bath meets all the indications of the disease but one, namely, special nourishment for the brain. In addition to an appropriate diet, this may be best supplied by the exhibition of either phosphorus or cod-liver oil, or both, according to indications in individual cases. The phosphorus may be given pure (in pill or solution), or as phosphide of zinc. When electricity is employed, he considers medical stimulants superfluous, nor, with one exception, does he know of any other remedial agents, in addition to those enumerated, from which special benefit might be expected. The exception alluded to is "the bromides," which may be advantageously given in cases that are characterized by inability so extreme, and hyperæmia so decided as to indicate the employment of some additional remedy to combat these special conditions.

As to the mode of administration of the bath in the treatment of cerebral neurasthenia:

It is impossible in this respect to lay down any routine formula either in regard to the duration of the bath, the temperature of the water, or the intensity or duration of the current. Each case has its own laws.

Very mild currents should be employed in the beginning; as recuperation advances stronger currents may be gradually introduced. The intensity of the currents should be carefully regulated to keep pace with the gradually increasing capacity of the various organs to respond to the electric stimulus without detriment. Both currents may be used from the beginning, although the faradic current is strictly necessary only when paretic or sub-paralytic conditions exist. The galvanic should precede the faradic, and should be employed not more than two minutes. When irritability is a feature of the case the current should be descending; otherwise ascending. This may be followed by the faradic, not of sufficient intensity however for the first few baths to cause any but slight muscular contractions. In most of the cases iron may with advantage be added to the bath. The duration of the bath should at first not exceed fifteen minutes; in some cases even this is too long, the patient complaining of being fatigued, perhaps after the lapse of ten minutes. When this is the case, the bath should at once terminate. It is in these cases, not the electric current but the warm water bath, that gives rise to the sense of fatigue. Later in the treatment the duration of the baths may be from twenty to twenty-five minutes, according to indications.

At a meeting held Nov. 3d, 1876, Dr. A. D. Rockwell made a few observations on the "Differential Indications for the Use of the Faradic and Galvanic Currents," of which the following is a synopsis:

The differential indications for the use of faradism and galvanism demands the closest scrutiny, for on the accuracy with which we estimate these indications will largely depend the success of our efforts.

An intelligent estimate of the point demands both a knowledge of the physical and physiological distinctions of the currents, and an experience that has not only been sufficiently extensive and varied, but that has been carefully and systematically formulated.

The greater mechanical effects of the faradic current render it powerfully tonic in its action, and the method of general faradization is indicated in many cases of nervous exhaustion and localized faradization in the mal-nutrition and atrophy of muscles. The galvanic current, by virtue of its greater power of overcoming resistance, and through its reflex tendencies, is indicated when we wish to act upon the central nervous system, and from its superiority in exciting nerve irritability we use it to produce contractions in paralyzed muscles that fail to respond to the faradic.

We must, however, to a very considerable extent rely upon the aid afforded by repeated clinical observation. In a practical review of the subject we naturally consider successively those diseases, or symptoms of disease, which seem to demand the faradic current; those that call for the galvanic; and, lastly, those in which both currents are frequently and interchangeably indicated.

I. Concerning those diseases that seem to demand the faradic current alone there is but little to be said.

There are in various generic diseases specific symptoms that invariably demand one or the other of the two currents, and even special qualities of current, but there are few distinct organic or functional conditions that in every phase of their manifestation demand alone and always any special form of electricity. Asthenopia, a condition depending on an absolute or relative deficiency of energy in the muscles of accommodation, and accompanied by hyperæsthesia of the retina and ciliary nerves, is about the only distinct disease that demands the faradic current alone.

II. There is also little to be said concerning the exclusive use of galvanism, although it certainly has a somewhat wider range. I would designate spinal irritation, certain sequelæ of cerebro-spinal meningitis, and most of those skin affections in which electricity has been shown to be of service, as the distinct diseases in which the galvanic is invariably superior to the faradic current.

III. Those diseases in which either current may prove equally of service, or where at one stage of the symptoms the galvanic, and later the faradic current is in-

dicated. In hemiplegia, where there exists, as is so often the case, an exalted electro-muscular contractility, electricity if used at all, should be used in the form of faradization, and with an exceedingly mild and rapidly interrupted current; even when muscular contractions are *somewhat* less readily called out than in the normal condition, the same current is as a rule preferable. When on the contrary there is a very great diminution, and even relatively to the faradic current, a complete loss of electro-muscular contractility — the galvanic current is indicated — the faradic coming into play only when the muscles give evidence of some reaction to its influence. In paraplegia, whether depending upon structural changes in the cord, or upon causes that result in simple anæmia or hyperæmia, we generally find after a short time, complete or approximate loss of farado-muscular contractility. The galvanic current is, of course, alone applicable in these cases, for the specific purpose of restoring nerve excitability, although the faradic is useful in attempts to improve the impaired nutrition of the paralyzed member. The difference in the reaction of the two currents is typically illustrated in some forms of facial paralysis, and especially when it results from the action of cold, (*rheumatismal*) or compression. In these cases the faradic current does not cause contractions, while not only do the muscles respond to the galvanic, but a much weaker current will answer, than when the parts are normal.

As the patient improves, it takes an increased tension of galvanism to cause the same effects, until finally farado-muscular contractility becomes manifest. The experiments of Erb, and after him of Ziemssen and Weiss seemed to show that after the laceration or division of the sciatic nerve in a rabbit, the excitability of the muscles through the first week became diminished for both currents, but subsequently while farado-muscular contractility became more and more feeble, galvano-muscular contractility rapidly increased, until two cells caused contractions. These results are interesting as illustrations of how clinical facts may be reinforced by electro-physiological experiment. In the essential paralysis of childhood, the farado-muscular contractility is generally diminished

and often abolished, while occasionally the galvanic current, as in facial paralysis from cold, produces contractions more readily than in health. If the muscles respond in any marked degree to faradization, it should be used, if not, galvanism is indicated.

The relief of pain whether of a pseudo-neuralgic or hysterical character, or whether dependent on true neuralgia or other causes, is a very important function of electrization ; but in no condition has it been more difficult to discriminate correctly in the selection of the proper method of electrical treatment. True neuralgia as defined by Anstie, is without doubt most successfully treated by galvanism, whilst hysterical neuralgia, and the so-called pseudo-neuralgias, which are simply forms of pain, occupying certain areas and running seemingly in the direction of certain nerves, yield most readily to faradism. More specifically, the effects of pressure in the various forms of neuralgia are exceedingly useful, as guiding symptoms, indicating the proper treatment. I do not by any means lay it down as a universal law, but it will certainly be found, that in the great majority of cases of neuralgia, where *firm* pressure over the affected nerves aggravates the pain, the galvanic current is indicated, while the faradic current has the greater power to relieve, when such pressure does not cause an increase of pain. In the class of cases called sometimes hysterical hyperæsthesia, it is well-known that firm and prolonged pressure affords marked relief, while pressure superficially applied, increases the distress. The faradic current is here infinitely superior to the galvanic.

In the treatment of the pain of herpes zoster galvanism is invaluable. In many cases that have fallen under my observation, I have never known it to fail to afford either complete or approximate relief. The effects of galvanism on the extreme suffering that so often accompanies mammary cancer are often little short of magical. I have in many instances seen the acutest agony relieved instantly, and while the relief is necessarily, seldom if ever permanent, it is possible in many cases, by repeated applications, to keep the pain in abeyance for months, and thus the necessity of constantly administering opium, is in a measure obviated. In the relief of neither of

the last named diseases have I found faradization to be of essential service. As we advance to the consideration of those other forms of disease which experience has shown to be more or less amenable to electrical treatment, it will be found to be more difficult without submitting the patient to preliminary and tentative applications, to discriminate between the currents best adapted to the case in hand, but I venture to assert, that in cases of chorea, of amenorrhœa associated with anæmia and debility, and in cases of nervous exhaustion in general, we cannot often err, if we resort to the faradic current by the method of general faradization.

THE MEDICO-LEGAL SOCIETY.

Testamentary Capacity of Monomaniacs.—Considering the interest which has been awakened by the remarks of Dr. R. L. Parsons, contained in my last communication on the testamentary capacity of monomaniacs, and of the importance of the subject, I am constrained to forward you the views of several eminent lawyers of this city—members of the Medico-Legal Society—upon the legal side of the question.

Hon. Geo. H. Yeaman said he had intended, at that meeting, to ask from the medical side of the house, a discussion of the question: "How far does pronounced partial insanity raise a suspicion, or a presumption, of a general mental impairment?" In other words, can a man be wholly mad or deluded upon some one important subject, and be wholly sane upon all others? But Dr. Parsons had anticipated him. And he was bound to admit, for some time past he had been inclined to modify the established and strictly legal view, and to adopt, as a scientific conclusion, the view indicated by Dr. Parsons.

How can the man who goes about proclaiming that he is the Christ Jesus, be either known or believed to be sane upon all other subjects?

Take the case of a man thinking he was daily and hourly pursued by a mad dog, barking at his heels, and expressing the most painful fear of hydrophobia. He is taken sick, is attended by an only daughter, makes his will, dies, and cuts her off, leaving all his estate to his robust sons. This man was a monomaniac upon the subjects of mad dogs and hydro-

phobia, but he is found to be sound on all other subjects, and therefore his monstrous will must stand. He may have thought his daughter put poison in his water, or his medicine. But there is no proof of *this* delusion; and the will not being, on the face of it, affected by the delusion of the barking mad dog, the will must stand—outrageous and unnatural as it is. The speaker admitted that there was another side to this question. The doctrine indicated might prove a two-edged sword. It might interrupt, almost prevent, the administration of criminal justice.

Must the man who says he is the Christ Jesus, or who thinks the mad dog is pursuing him, but who seems sound on other questions, be excused for murder, arson, or theft, upon the ground of insanity? Here is the danger and the difficulty.

He mentioned these things to call attention merely to the extreme intricacy and difficulty of the question; and he did not regret that we spend so much of our time upon this and kindred subjects. It is, to-day, the most difficult and delicate question that engages the attention of science and law-makers, and he thought that we might hope that the discussions conducted here would at least help to direct science and legislation to correct and humane conclusions.

Mr. F. R. Conrdert confessed to being somewhat startled and alarmed at the declaration that has fallen from the lips of the learned medical gentleman (Dr. Parsons). If he understood that gentleman correctly, he declares it as his opinion that where partial insanity, or monomania is proved, it must be assumed that the whole mind is diseased.

In other words: that there is really no such disease as monomania, or partial insanity. This is a very startling doctrine at this day, after the great study and attention that has been paid to this subject, and the results that have been reached by scientific men, and it seemed to him that a most dangerous revolution would be brought about, if courts of law were to accept it as their guide. If such a doctrine is sound, the will of a man afflicted with partial insanity is to be set aside upon the proof of that fact, even where such insanity has no connection, real or apparent, with the instrument in controversy. Then, indeed, the practice of setting aside wills will be the

rule, and their admission the exception. It is a very uncomfortable, and still a generally recognized fact, that very few men, if any, possess minds equally well balanced on all subjects; few, indeed, who never betray such weakness upon any particular subject, or group of subjects, political, religious, social, domestic, or personal, as not to make them open, at least to the charge of eccentricity, bordering upon the boundary line of insanity. What a temptation is offered by the theory of the learned doctor, to all who may be interested in magnifying such eccentricities into positive aberration of the intellect.

One of the leading physicians of this city, who has attained great distinction in the investigation of these subjects, recently narrated to the speaker the following instance which came under his personal observation:

A member of the bar called upon him and stated that he heard noises which haunted him night and day, and which at times resembled a human voice, and prompted him to do wicked and criminal things, against which his reason rebelled. The learned doctor commenced by an examination of his ear-drum, and found a deposit of matter, which he removed. With this deposit the noises disappeared. The disease vanished, and this man, who entered his office a monomaniac, departed with his reason restored.

Some months after, this same lawyer, in the course of an argument in court, grossly, and without provocation, insulted and threatened the presiding judge, who very properly committed him to jail. The unfortunate man's relatives called upon the doctor, who, having examined his former patient, came to the conclusion that he was suffering from the same disease as theretofore, and that his condition was attributable to the same cause. He was merely obeying the voices that prompted him to insult the court. The doctor stated the fact to the judge, who at once discharged the unfortunate man from imprisonment.

Now, suppose that this lawyer, on his way to the doctor's office, when he was pursued by those phantom voices, had died. Would his will have been void? It certainly would, according to the theory of the learned physician and of the gentleman

who spoke after him. It certainly would *not*, if the decisions in this State, some of which have been cited by Mr. Patterson, are to cover cases of this character.

Again, the learned physicians who are called as experts in these cases, concur in characterizing as delusion and as constituting a species of insanity, that condition in which a man fancies that he sees persons and hears voices that do not exist. Within a few months one of the wisest and most experienced lawyers of our day passed away. During the last thirty years of his life, he was as fully convinced that he constantly saw and conversed with persons long since dead, as he was of his own existence. Not only was he imbued with the *doctrine* of Spiritualism, but for him the reality of such apparitions was undeniable. This was undoubtedly what the doctors have constantly called "a case of insane delusion," and yet he was at all times a wise, prudent, sagacious, practical adviser. No lawyer, said the speaker, would pretend, and no court, he was very sure, would hold that this gentleman's will must be deemed void, simply because of the existence of such a delusion. He admitted that if, in the will, the influence of that delusion was clearly traceable, and it was shown that he had been influenced thereby to such an extent that his posthumous bounty was diverted from its legitimate and proper channel, then the will must be declared the product of the delusion, and therefore void. But if in regulating his affairs, with a view to a distribution of his estate after death, he showed a clear comprehension of the various claims of all the persons who might properly look to his bounty, and there was no trace whatever of the hallucination under which he labored during his life, then the courts must hold the instrument to be good.

He was aware that many years since Lord Brougham held very much the same opinion as the learned doctor, but that opinion has found no followers and has never been cited, that he was aware of, with approbation in the leading cases of the day.

In conclusion, he would say, without entering into any discussion as to the scientific aspects of this question (with which aspects the learned doctor is infinitely more familiar),

that the rule suggested by the lecturer of the evening is the true rule, and cannot be varied or departed from except by abandoning those landmarks which have guided courts and text writers for many years past, and which rule, upon the whole, with all its imperfections, is the safest, the most practical and the best.

Dr. Parsons said, that judging from the descriptions given, a great majority of the cases to which the legal gentlemen had referred as being monomaniacal, were probably not insane at all.

Mr. Patterson arose and said the course of the discussion had been directed to two matters to which he intended to give prominence, namely: *First*, what rule can the courts with safety apply to the determination of mental capacity in monomaniacs. *Second*, the disposition of some persons to attempt to find in cases of monomania, the evidences of a general insanity. He referred to the cases cited by medical gentlemen who had spoken, and said that in them were clearly exhibited indications of partial insanity merely. Now if the mental processes of those people were astray only as to one topic or class of topics, and it was established that in all other matters the individuals were rational and intelligent, that they apprehended their respective situations, and understood the claims of their kindred upon them, and there could not be descried in the will any relation to or evidence of the influence of the monomaniacal delusion, what gross injustice it would be to say: "Yes, these men have made reasonable wills — they have provided for their families — but they were peculiar in entertaining some delusions which affected their thoughts, but have had no perceptible influence upon their testamentary acts; therefore, they shall *not* be permitted to dispose of their estates. They can have no privilege of expressing preference — the law must make their wills."

Now, in all departments of science, where rules of general application are to be reduced from multitudes of facts, the results of the observations of many persons, the main difficulty is in formulating the rule, which must, of course, represent general facts and not mere exceptions. In these cases of monomania, the courts have been keenly alive to the necessity of

defining the conditions under which they will sustain the wills of monomaniacs. The decisions have varied, but it must always be borne in mind, that the rule as lawyers now understand it, is based exclusively upon the teachings of the accepted medical authorities on the subject, and those teachings, have of course preceded the adoption of the rule.

The necessity for a general rule on this subject is admitted by all to be imperative. Now where can a rule be found which shall protect the family of one partially insane from the extravagances of his delusions, at the same time reserve to him the right to dispose of his property as he chooses? The sentiment of the legal profession seems to be that to avoid the will of a monomaniac, (keep in mind the definition of a monomaniac) it must be a will which discriminates against his wife and children or other relatives, if he has any, and it must be a will made under the influence of a delusion.

But there is, of course, fair ground of discussion as to the reasonableness of the rule indicated. What surprises lawyers, however, is to hear such views as have been urged by the learned doctor (Parsons). If he is correct, then all the antecedent learning, experience and knowledge of both professions must be so much error and waste; then there is really no distinction between general and partial insanity; there is no such thing as monomania, except as a mere word utterly meaningless, and that is the proposition of which lawyers justly complain; viz., the disposition to find evidences of general insanity in case of monomania. If this is persisted in, you must lay down a rule which shall be as rigid in its exclusion of testamentary power, as the old English rule was in its inclusiveness, and that would be merely to introduce chaos into the law again. The reasonable rule lies where truth generally does, in the mean between the two extremes.